

Module I

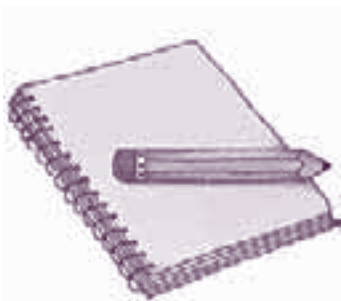
Understanding Money and Money Management



Prerequisite skills

To work through this unit, students will need to:

- understand basic graphing and timelines
- understand basic algebra, multiplication, division, percentages, ratios, exponents and fractions
- express numbers with decimal places
- calculate area for simple shapes
- read simple spreadsheets and tables
- use a calculator
- understand how to access a Web site given its URL



Teacher Notes

Always inform students of the expectations and how they will be evaluated before teaching a lesson.

The concepts of money management and wealth building are key in encouraging students to personalize financial literacy. Students will also gain insight into the cultural contributions to the concept of money.

Making Connections

How do different beliefs such as political, social, religious, customs, etc. influence what a person considers to be “wealth” or “luxuries”? For example, why would money management be important to someone who has taken vows of poverty? Or consider the notion of health or clean drinking water as “luxuries.”

Activity 1 – Introducing Personal Finance

Expectations

Students will:

- understand the concepts of investments and wealth,
- be able to understand and construct a historical time diagram, and
- be introduced to new terms related to money management.

Assessment Tools

It is recommended that students keep both a *journal* and *portfolio* specifically for their *Taking Stock in Your Future Intermediate* exercises.

Suggested for use with this introduction:

- Observation
- Performance Problem
- Journal

Co-operative Group Strategies

- Three-Step-Interview
- Class Share
- Numbered Heads
- Pairs Explore
- Pairs Share

Note that all strategies are described in detail on pages 19 to 22 of the introduction.

Instructional Steps

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|---|--|
| 1 | <p>Introductory Activity: In groups of four, ask students to read “Introducing Personal Finance” on page 28.</p> <ul style="list-style-type: none"> • Students use <i>three-step-interview</i> to decide on good reasons to begin to accumulate money. <i>Class share</i> some of these ideas. • Ask groups to read “What is Wealth?” on page 29. Use <i>numbered heads</i> to choose one person from each group to identify any term introduced in this section except wealth. |
|---|--|

	<ul style="list-style-type: none"> As a class, discuss with students the meaning of “wealth” and what “being wealthy” means to them. Students may mention owning tangibles as “being wealthy,” however they should be encouraged to distinguish between assets that appreciate and those that depreciate in value. Assets that increase in value contribute to financial security, while those that depreciate cause net worth (i.e. wealth) to diminish over time.
2	<p>Authentic Activity: Groups break up into pairs to read “The Evolution of Money” on page 30.</p> <ul style="list-style-type: none"> Review use of a line graph and hash marks. Use <i>pairs explore</i> to study the timeline on page 31 and discuss understanding of the timeline. Have students use <i>pairs share</i> to discuss exercises 1 to 6 on pages 32 and 33.
3	<p>Closure: Ask students to summarize the information on “Coins that Span Almost 3000 Years” in their journals.</p>

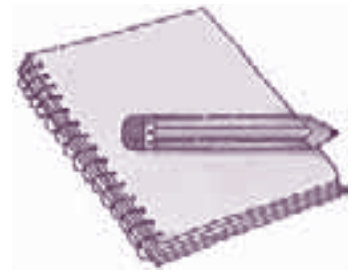
Assessment

Note that certain assessment strategies such as *observation* are usually used to focus on the contributions of specific students. For full class assessments, performance tasks and performance problems are more appropriate.

- 1 Use observation to assess the contribution of students during *class share* activities.
- 2 Use exercises 1 to 6 as a *performance problem*.
- 3 Ask students to write in their *journal* “What Wealth Means to Me.”

Terms

- Appreciate
- Debt
- Liability
- Money Management
- Asset
- Depreciate
- Mint
- Net Worth
- Barter
- Investment
- Wealth

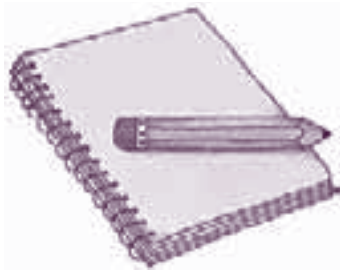


Teacher Notes

You may want to observe specific students rather than the whole class, particularly during *think-pair-share*, to ensure each student is contributing to the discussion.

Making Connections

What do A.D. and B.C. stand for? You may want to introduce the alternative of C.E. (common era) and B.C.E. (before the common era).



Teacher Notes

Students who realize the variety of ways that they can make money at a young age may begin to plan how to use these earnings wisely.

Students should understand that pay reflects a variety of factors, e.g. level of training.

The class may need further explanation on the meaning of overtime and time and a half.

Brainstorming

Introduce students to **D.O.V.E.** prior to brainstorming:

Defer judgement

Opt for original ideas

Vast numbers of ideas are best

Expand by association

Activity 2 – Earning Money

Expectations

Students will:

- define different types of employment available to young students,
- understand the various ways money may be paid for services,
- demonstrate proficiency in mathematical operations with and without the calculator,
- review linear measurement,
- apply and discuss patterning strategies, and
- be introduced to new terms related to money management.

Assessment Tools

Suggested for use with this activity:

- Observation
- Journal
- Performance Task
- Performance Problem

Co-operative Group Strategies

- Brainstorm
- Pairs Share
- Think-Pair-Share
- Pairs Explore

Instructional Steps

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|----------|--|
| 1 | <p>Introductory Activity: Begin with a game of “Wealth Builder.” Form teams of 5 or 6 to act as one contestant. Use the game rules and questions provided (page 44).</p> <ul style="list-style-type: none"> • Ask each team to <i>brainstorm</i> what they would do if they won one million dollars, then share their ideas with the class and support them with reasons. |
|----------|--|

	<ul style="list-style-type: none"> Since it is highly unlikely to win one million dollars, ask teams to <i>brainstorm</i> what jobs they could get at their age to start earning money. Ask students to consider the effects the following would have: training, type of job, and risk level. Ask students to share their ideas with the class.
2	<p>Authentic Activity: In pairs, ask students to <i>pairs share</i> their understanding of salary, hourly wage, and piecework.</p> <ul style="list-style-type: none"> Students read page 45, “Earning Money.” Ask students to use <i>think-pair-share</i> to identify jobs classified as salaried, hourly wage, or piecework. As a class, <i>brainstorm</i> the “Discuss” questions. Ask students to complete the exercises on page 46 individually. Discuss each question with the class.
3	<p>Investigation: Read the Investigation “Mass Mailing for Music Madness” on page 47.</p> <ul style="list-style-type: none"> Using <i>pairs explore</i>, students complete Investigation exercises 1 to 5. Discuss solutions and ideas as a class. Using <i>pairs explore</i>, read “Choosing a Payment Option” on page 48. Complete exercises 6 to 8. Use class share to discuss the Investigation.
4	<p>Internet Investigation: Investigate the minimum wage in your province to respond to exercises 2 and 3. Use the worksheet provided on page 50.</p>
5	<p>Extension 1: Choose a country. Recalculate the salary, hourly wage, and piecework Jason, Sarah and Kevin would have to earn to match minimum wage in that country. Use the worksheet on page 51. OR</p>
6	<p>Extension 2: Find several Web sites that help people to find jobs. List these sites and five samples from each site of jobs they advertise. Use the worksheet on page 52.</p>

Assessment

- 1 Use *observation* to assess the contribution of students during *class share* activities.
- 2 Ask students to explain their solution to Investigation exercise 5 in a *procedural journal* using numbers, words, and diagrams.
- 3 Collect Investigation exercises 6 to 8 as a *performance task*.
- 4 Use the Internet Investigation as a *performance problem*.

Terms

- Commission
- Minimum wage
- Piecework
- Time and a half
- Hourly wage
- Overtime
- Salary

Integrating Technology

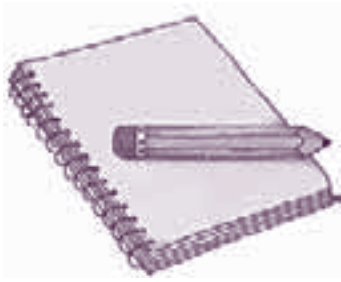
The Internet has an integral role in mathematics learning, and will be used throughout the *Guide*. It is recommended that you visit all Web sites first to make sure there have not been changes, and to familiarize yourself with the layout.

Making Connections

What kinds of employment tend to be paid by the hour as opposed to by piecework? Why do you think that is?

What might someone working on a coffee farm in Chile expect as payment, compared to the wage expectations of someone picking tomatoes in Ontario?

How do benefits (health, pension plan, etc.) influence wages?



Teacher Notes

If you have not used the co-operative group learning strategies before, start with *think-pair-share*. This strategy encourages each student's active participation.

Be sure to include a social skill for the lesson that meets the needs of your students. For example, you may want students to respect varying opinions during brainstorming.

Making Connections

Students should be made aware that contracts for an individual under the age of 16 have no legal standing.

Activity 3 – Contracting Your Services

Expectations

Students will:

- understand the use of contracts,
- practise measurement skills,
- be introduced to the concept of compounding money,
- evaluate data and recognise a pattern, and
- be introduced to new terms related to money management.

Assessment Tools

Suggested for use with this activity:

- Presentation
- Performance Problem
- Journal

Co-operative Group Strategies

- Brainstorm
- Pairs Explore
- Class Share
- Pairs Share

Instructional Steps

- | | |
|----------|---|
| 1 | <p>Introductory Activity: Make an overhead of “Contracting Your Services” on page 60 and discuss as a class why a written contract is preferable to a verbal one.</p> <ul style="list-style-type: none"> • Reasons may include increased security and legality, increased clarity regarding services to be rendered, and the ability for both parties to accurately remember the scope of the agreement. • In groups of four, <i>brainstorm</i> other jobs that could be on a contract basis. |
| 2 | <p>Authentic Activity: Students individually complete exercises 1 to 3 on page 61. Pair students and ask them to review their answers and place their results on chart paper or the board.</p> <ul style="list-style-type: none"> • Note that the small amount Angela charges to cut the Wong’s lawn barely compensates her for setting up her lawn mower and collecting her money. Discuss with students the idea of setting a minimum fee. |

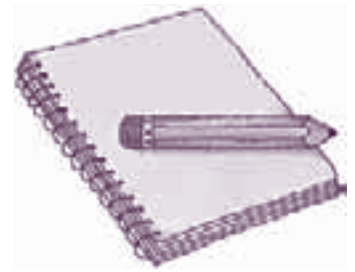
3	<p>Internet Investigation: Print off the instructions from the Statistics Canada Web site and distribute. Students <i>pairs explore</i> the Web site and complete exercises 1 to 3 using the worksheet on page 62.</p> <ul style="list-style-type: none"> • Have each pair estimate the money they could earn in a month babysitting in their neighbourhood.
4	<p>Investigation: Have the students ask their parents how much it would likely cost to paint the interior of their home. Share this with the class, then read “Melissa Contracts to Work for Pennies” on page 63.</p> <ul style="list-style-type: none"> • In groups of three, <i>brainstorm</i> Investigation exercises 1 to 3. • <i>Class share</i> each group’s answers. It will be important to point out that Melissa’s contract pays very little for the first two weeks, but has huge returns later. • Using <i>pairs explore</i>, do exercises 4 to 7 on page 64 to find the pattern on the table. Check patterns using <i>pairs share</i>. • Compare the patterns as a class.
5	<p>Closure: Create, as a class, a summary note and use the pattern to find the sum of $2 + 2^2 + 2^3 + \dots + 2^{20}$ (page 64).</p>
6	<p>Extension 1: Have students calculate the length of contract (at 1 cent more per day) needed to receive the same or more money for a professional painter to paint the interior of their own home. Use the estimate parents made for the Investigation. OR</p>
7	<p>Extension 2: Ask students to calculate Melissa’s August earnings if she started at:</p> <ol style="list-style-type: none"> 2 cents for the first day, 4 cents for the second day, 8 cents for the third day, ... 3 cents for the first day, 9 cents for the second day, 27 cents for the third day, ...

Assessment

- 1 Observe students’ *presentation* skills during the Motivating Activity.
- 2 Have the students write a *journal* in response to the Internet Investigation, exploring the probable cost of a babysitting course and the resulting fee that could be charged as a babysitter.

Terms

- Contract
- Income



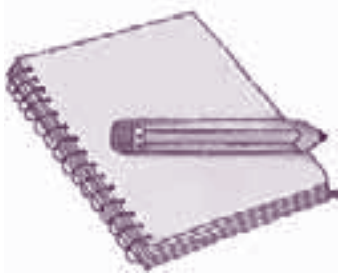
Teacher Notes

A rubric developed by your class on effective presentations would help students enhance presentation skills and assess their own performance.

Materials:

For the Investigation, you will need:

- Calendar
- Calculator



Teacher Notes

When brainstorming, provide students with roles such as Facilitator, Recorder, Reporter and Encourager.

Remember that groups should have both academic and social goals.

Integrating Technology

Students can use a calculator for these exercises.

Activity 4 – Other Forms Of Money

Expectations

Students will:

- understand the use of cheques, credit cards, and debit cards,
- be able to write cheques with the proper format,
- understand the flow chart for each form of money,
- use measurement skills to investigate mathematical relationships, and
- be introduced to new terms related to money management

Assessment Tools

Suggested for use with this activity:

- Journal
- Presentation

Co-operative Group Strategies:

- Brainstorm
- Pairs Share
- Jigsaw
- Pairs Explore
- Class Share
- Numbered Heads

Instructional Steps

1	Introductory Activity: As a class, <i>brainstorm</i> and discuss different payment options, e.g. credit and debit cards, cheques.
2	<p>Authentic Activity: Using <i>pairs explore</i>, have the students read and complete page 72, then use <i>pairs share</i> to compare answers and make corrections if necessary.</p> <ul style="list-style-type: none"> • Display the Canadian Heart Federation cheque on an overhead and have two or three pairs <i>class share</i> their findings. • Ask students to fill in the blank cheque on page 73. • Review the flowchart on this page with the class. • In pairs, <i>brainstorm</i> exercises 1 to 5. • <i>Class share</i> the flow charts for exercise 5.
3	<p>Investigation: Assign students to a debit card or credit card group.</p> <ul style="list-style-type: none"> • In their new groups, have students read “Exploring Debit & Credit Cards” (page 74) and discuss the key elements of their card. • Pair one credit and one debit student, and ask pairs to explain their card to each other in a modified <i>jigsaw</i>.

- Have *pairs explore* complete Investigation exercises 1 to 9 on page 75. Use *pairs share* to check answers. Use *numbered heads* to choose the presenter per problem.
- Display each group's answer on chart paper and share with the class.
- Ask the class to *brainstorm* the advantages and the disadvantages of using a credit or debit card (exercise 10). Some advantages and disadvantages are:

Credit

Advantages

- good for emergencies when you don't have enough money
- can be used for identification, phone or Internet orders, and internationally

Disadvantages

- can get into debt by spending more than you are able to pay back
- present a security risk

Debit

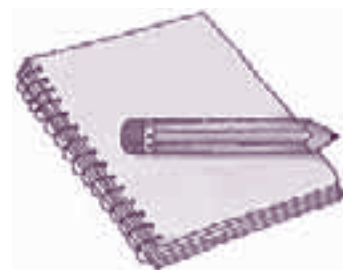
Advantages

- no need to carry large amounts of cash
- can spend only what you have

Disadvantages

- service charges
- can spend only what you have

- 4** Closure: Create, as a class, a summary note which includes methodology on calculating interest and the advantages and disadvantages of credit and debit cards.



Teacher Notes

Take time at the end of the lesson to debrief how well groups worked together. Ask them for evidence of meeting both academic and social goals.

Making Connections

Which countries tend to use credit cards more often? Are there differences in the kinds of credit cards available around the world? In Italy, for example, credit cards do not typically permit the holder to carry a balance.

Assessment

- 1 Students write in a *journal* to explain one purpose for the invention of cheques, credit and debit cards.
- 2 Students write in a *journal* to explain why they think cheques are only valid for six months.
- 3 During the Investigation, *presentations* are made by selected group members.

Terms

- Account
- Cashing a cheque
- Central clearing house
- Cheque
- Credit card
- Debit card
- Endorsing a cheque
- Interest
- Payment period
- Stale dated



Teacher Notes

Students learn that money management has two components: increasing savings, and decreasing spending. In this Activity, students learn to analyze their expenditures and to budget to save.

Three-Step-Interview

When first using the three-step-interview, demonstrate the process with a group of four using a high interest topic. Ensure students understand roles and purposes.

Making Connections

Discuss the different aspects of income (gross, disposable and discretionary) when preparing a budget.

Further discuss the differences between needs and wants and how the concepts of “needs” and “wants” may differ depending on standard of living.

Activity 5 – Saving and Budgeting

Expectations

Students will:

- understand the concept of budgeting to increase savings,
- evaluate data and draw conclusions from data analysis,
- use many types of graphs including circle graphs, and
- be introduced to new terms related to money management.

Assessment Tools

Suggested for use with this activity:

- Observation
- Performance Problem
- Portfolio
- Journal

Co-operative Group Strategies

- Pairs Explore
- Brainstorm
- Three-Step-Interview
- Class Share

Instructional Steps

1	Introductory Activity: Ask students to read page 80 “Being Responsible.” <ul style="list-style-type: none"> • Students <i>pairs explore</i> the discuss questions. • <i>Brainstorm</i> ways of saving money as a class.
2	Authentic Activity: Students read “Saving and Budgeting” on page 81. <ul style="list-style-type: none"> • <i>Brainstorm</i> as a class two or three examples of short- and long-term goals. • Students work individually to complete their short- and long-term goals on page 81. • Have students read “Distinguishing Your Needs from Your Wants” on page 82. • Use <i>three-step-interview</i> to determine which extreme students tend to prefer: spending only on needs or only on wants. • Pairs discuss why it is not wise to be at either extreme of spending.

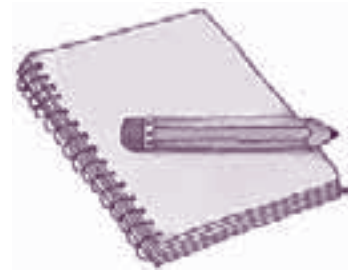
	<ul style="list-style-type: none"> Students individually complete exercises 1 to 6 on page 83 and <i>class share</i> their ideas about spending habits, and whether their table reflects these ideas.
3	<p>Investigation: Have students individually read “Saving Money” on page 84, to complete Investigation exercises 1 to 4.</p> <ul style="list-style-type: none"> Assign Investigation exercise 5 on page 85 as homework.
4	<p>Closure: Create, as a class, a summary note which includes “saving = earnings – expenditure” and how savings grow. Use examples from the students class work to reinforce the concept of needs, wants, earnings, and savings.</p>
5	<p>Extension: In pairs, have students revisit how much money they estimate they would need to attend post secondary education. Have them consider now what their needs and wants would be. If they saved \$500 a year from grade 9, how would they calculate the amount saved by the end of grade 12?</p>

Assessment

- 1 Assess the involvement and contribution of each student using *observation*.
- 2 Collect Investigation exercise 5 as a *performance problem*.
- 3 Ask students to place their answers to “Saving and Budgeting,” “Distinguishing between Needs and Wants,” and Investigation exercise 5 in their *portfolios*.
- 4 Ask students to write a *journal* on the advantages and disadvantages of saving and spending.

Terms

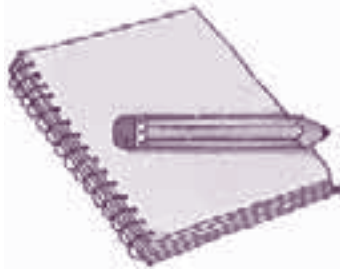
- Budget
- Earnings
- Expenditures
- Needs
- Pay yourself first principle
- Savings
- Wants



Teacher Notes

Communicating in mathematics class is an important strategy to reinforcing learning. Asking students to explain answers encourages higher order thinking skills.

In this activity, the term *expenditure* describes payments for both needs and wants. This differs from the term *expense* (Activity 11), which refers only to those expenditures that decrease a company's income in a specific fiscal year.



Teacher Notes

Students will formally estimate and calculate taxes and tips, and understand their effect on budgeting.

Using a graphic organizer such as a word web will help students present information to the class and will promote greater retention.

Activity 6 – Costs: Sales, Discounts & Taxes

Expectations

Students will:

- understand the concepts of responsible spending,
- estimate and calculate tips and taxes,
- read information from circle graphs,
- practise converting decimals and fractions to percents,
- practise completing calculations using order of operations,
- explain numerical operations in their own words, and
- be introduced to new terms related to money management.

Assessment Tools

Suggested for use with this activity:

- Journal
- Observation
- Performance Task

Co-operative Group Strategies

- Brainstorm
- Class Share
- Pairs Explore

Instructional Steps

1	Introductory Activity: As a class, <i>brainstorm</i> ways of spending less money. Some possible ways include coupons, sales, collecting points, and purchasing in bulk.
2	<p>Authentic Activity: Have students read page 96, “Costs: Sales and Discounts.”</p> <ul style="list-style-type: none"> • Students individually complete exercises 1 to 5 on page 96. • Choose a presenter per exercise. The presenter displays and presents his/her work on the board. • Discuss as a class whether Andy’s purchase in exercise 6 is wise. Ask students to write a <i>journal</i> to explain their decisions.

3	Investigation: Read page 97 “Additional Costs: Taxes and Tips” in groups of four. Have each student <i>role-play</i> one of the methods for calculating the tip on \$27.80. <i>Class share</i> thoughts on the methods. <ul style="list-style-type: none"> • Use <i>pairs explore</i> to answer the Investigation exercises 1 to 5 on page 98. • Complete exercises 6 and 7 individually. Use <i>class share</i> to check solutions.
4	Closure: Create, as a class, a summary note that includes the relationship among regular price, discount, sale price and tax. Use example exercises done by the students to reinforce these concepts in the note.
5	Extension: Choose a specific item such as a name brand computer or a TI-83 plus calculator and research the best price by phoning stores, searching for ads, visiting stores or using the Internet. OR
6	Extension: Have students explore other ways that we are taxed (federal and provincial income tax, property tax, business tax) and research the rates.

Assessment

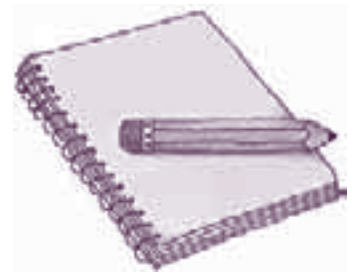
- 1 Students write a *journal* to explain for what they think the government uses tax money.
- 2 Use *observation* to assess “staying on task” of specific students.
- 3 Students complete this *Performance Task*:

Nasreen treats two friends to lunch at a restaurant. The server takes their order for 2 hamburgers (\$4.25 each), a salmon sandwich (\$3.95), 3 medium drinks (\$1.29 each), and a large order of fries (\$2.50). How much change will Nasreen get if she has \$30 and the tax is 11%? (Solution: \$9.11 change, tip \$2.82 before or \$3.13 after tax.)

An advanced or level 4 response would involve a discussion of whether or not to tip on tax. Discuss this issue at the completion of the task.
- 4 Students write a *journal* on how savings grow when expenditures are reduced by using coupons. Students should consider that spending with coupons is not a good idea if the purchase is unnecessary as in exercise 6 of “Costs: Sales and Discounts.”

Terms

- Discount
- Goods and Services Tax
- Harmonized Sales Tax
- Provincial Sales Tax
- Tax
- Tip



Teacher Notes

Note taking and summarizing are skills designed to help students determine the most important facts and those not critical to understanding a concept. These skills have significant impact on promoting learning and retaining information.

Making Connections

Why do shops have sales or discounts?

How does standard of living affect the cost of goods?